California Environmental Protection Agency
AIR RESOURCES BOARD

Notice of Public Availability of Modified Text

PUBLIC HEARING TO CONSIDER THE ADOPTION AND AMENDMENT OF VAPOR RECOVERY SYSTEM CERTIFICATION AND TEST PROCEDURES

Public Hearing Date: October 25, 2001
Public Availability Date: March 22, 2002
Deadline for Public Comment: April 22, 2002

At its October 25, 2001, public hearing, the Air Resources Board (the "Board" or "ARB") approved the amendment of sections 94010, 94011, 94153, 94155 and 94163 of title 17, California Code of Regulations (CCR), which incorporate by reference the following vapor recovery certification and test procedures:

D-200	Definitions for Vapor Recovery Procedures, as last amended February 1, 2001
CP-201	Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities, as last amended July 25, 2001
TP-201.1D	Pressure Integrity of Drop Tube Overfill Protection Devices, as adopted February 1, 2001
TP-201.4	Dynamic Back Pressure, as last amended April 28, 2000
TP-201.6C	Compliance Determination of Liquid Removal Rate as proposed for adoption September 7, 2001

The Board also approved the adoption of sections 94164 and 94165, title 17, CCR, which incorporate by reference the following new vapor recovery test procedures:

TP-201.1B	Static Torque of Rotatable Phase I Adaptors, as proposed for adoption September 7, 2001
TP-201.1C	Pressure Integrity of Drop Tube/Drain Valve Assembly, as proposed for adoption September 7, 2001

At the hearing the Board approved modifications to the regulations originally proposed in the Staff Report released on September 7, 2001, in response to continuing staff review and public comments received since the Staff Report was published. The modifications affect the text of title 17, CCR, section 94153 and certification and test procedures D-200, CP-201, TP-201.1B, and TP-201.1C. The following is a brief description of the modifications:

Modifications to D-200: Definitions for Vapor Recovery Procedures

As originally noticed, D-200 defines the term “major modification” as the addition, replacement, or removal of an underground storage tank, underground piping, vapor piping within a dispenser, or a dispenser at an existing installation. The replacement of a dispenser is not a major modification when the replacement is occasioned by end user damage to a dispenser. As modified, D-200 clarifies the term “major modification” to differentiate between the modifications that cause the Phase I system to have the same status as a new installation and which modifications cause the Phase II system to have the same status as a new installation. See attachment 1.

As originally noticed, the term “overfill protection device” is used to define a device used to stop the delivery of product to a storage tank to prevent over-filling and potential spillage. As modified, the term “overfill prevention device” has replaced the term “overfill protection device” while the definition remains unchanged. This amended term provides a more accurate description of the component and is consistent with the term referenced in Underground Tank Regulations (enforced by the State Water Resources Control Board) used to describe the same device. See attachment 1.

Modifications to CP-201: Certification Procedure for Vapor Recovery Systems

As originally noticed, the term “overfill protection device” is used in table 3-1 and section 3.3 of CP-201 to describe the device used to prevent the overfilling of an underground storage tank. As modified, the term “overfill prevention device” has replaced the term “overfill protection device.” This amended term provides a more accurate description of the component and is consistent with the term used by the State Water Resources Control Board in the underground storage tank (UST) regulations (title 23, CCR, section 2635). See attachment 2.

As originally noticed, the term “containment box” is used in table 3-1 and section 3.6 of CP-201 to describe the five-gallon, bucket shaped, spill containers which surround the underground storage tank product and vapor adaptors. As modified, the term “spill container” has replaced the term “containment box.” This amended term provides a more accurate description of the component and is consistent with the term used by the State Water Resources Control Board in water quality regulations (title 23, CCR, section 2635). See attachment 2.

As originally noticed, table 16-1 of CP-201 identifies four components associated with Phase II vapor recovery systems as “system-specific.” The table does not identify any Phase I System components as “system-specific.” By contrast, table 16-2 identifies several Phase I vapor recovery components as non-system-specific. Testifying on behalf of the California Air Pollution Control Officers Association (CAPCOA), testimony at the hearing identified the need to establish “system-specific” components for Phase I systems. Without the “system-specific” designation, critical Phase 1 components may be installed with incompatible components. Table 16-1 has been modified to include Phase I vapor recovery components identified as system specific because they are critical to the compatibility of system components: product and vapor adaptors, spill-container valves and configurations, and drop tube overfill prevention devices. The

same Phase I system components have been removed from the modified table 16-2 listing of non-system-specific components. See attachment 2.

As originally noticed, section 4.8.3 was proposed to clarify the certification requirement for liquid retention testing by specifying not less than 10 refueling operations and four fill-ups (excluding top-off). Section 6.5.4 of TP-201.2E, Gasoline Liquid Retention in Nozzle and Hoses requires 10 tests (refuelings) for each nozzle. As modified, section 4.8.3 has been amended to be consistent with TP-201.2E by specifying not less than 10 refueling operations per nozzle.

Modifications to TP-201.1B: Static Torque of Rotatable Phase I Adaptors Test Procedure

As originally noticed, the cover page of TP-201.1B indicates that the procedure is a compliance test procedure. As the test procedure will be used in both certification and compliance testing, the modified cover page corrects the title as shown in Attachment 4.

As originally noticed Section 5.1.1 of TP-201.1B states the minimum accuracy of the torque wrench shall be 1.00 percent of full-scale range. As modified, the minimum accuracy has been changed to 3.00 percent. This change is necessary to accommodate the varying degree of accuracy of torque wrenches commonly used in the field. See attachment 4.

As originally noticed, TP-201.1B failed to specify the minimum readability of the torque wrench. As modified, section 5.1.2 has been added stating that the minimum readability of the torque wrench shall be 5.00 pound-inch increments. See attachment 4.

As originally noticed, section 5.4 of TP-201.1B describes a socket extension as a piece of equipment needed to conduct the torque test. As modified, section 5.4 has been renumbered to 5.3 and modified to include the socket wrench and extension as the tools to be used to verify the rotation of the adaptor. Other sections have also been renumbered. See attachment 4.

As originally noticed, the proposed TP-201.1B is used to certify product and vapor adaptors to, and determine compliance with, the static torque specification of 108 pound-inches and to verify that adaptors rotate 360 degrees. The proposed TP-201.1B inadvertently did not specify the procedure for determining rotation and did not specify the order of conducting the rotation and static torque tests. Section 7.3 has been added to include a procedure for verifying rotation. Section 7.5 has been added to instruct on taking and recording the torque measurement valves. See attachment 4.

As originally noticed, the data sheet (Form 1) of TP-201.1B did not provide a means to indicate if the adapter passed the 360 degree rotation test. As modified, a 360-degree rotation field has been added to the data sheet (Form 1). See attachment 4.

Modifications to TP-201.1C: Pressure Integrity of Drop Tube/Drain Valve Assembly

As originally noticed, the cover page of TP-201.1C indicates that the procedure is a compliance test procedure. As the test procedure will be used in both certification and compliance testing, the modified cover page corrects the title as shown in Attachment 3.

As originally noticed, section 7 of TP-201.1C states that if the pressure does not reach 2.00 inches of water column within 90 seconds, the drop tube/drain valve assembly does not comply with the maximum allowable leak rate. In conducting the test procedure, staff found that it might take as long as 165 seconds to reach the 2.00 inches of water column. Therefore, the time to reach 2.00 inches of water column is modified from 90 seconds to 180 seconds. See attachment 3.

Modifications to Title 17 of California Code of Regulations

Section 94153 implies that Test Procedure (TP)-201.4 (Dynamic Back Pressure) is applicable solely to aboveground tanks. Since the test procedure is used for both aboveground and underground tanks, section 94153 is modified delete the implied limitation of the applicability of the test procedure. See attachment 5.

Board Resolution 01-48 sets forth the Board's action approving title 17, CCR, sections 94010, 94011, 94153, 94155, 94163, 94164, and 94165, and approving the amendment and adoption of the incorporated certification and test procedures for vapor recovery systems, D-200, CP-201, TP-201.1B, TP-201.1C, TP-201.1D, TP-201.4, TP-201.6C, as modified. The Resolution and the modified text of the regulations and incorporated test methods are available on the Board's Web site at http://www.arb.ca.gov/vapor.htm or http://www.arb.ca.gov/regact/vrmth01/vrmth01.htm. Copies of these documents can also be obtained by contacting Mr. George Lew at (916) 327-0900.

In accordance with section 11346.8 of the Government Code, the Board directed the Executive Officer to adopt sections 94010, 94011, 94153, 94155, 94163, 94164, and 94165, title 17, CCR, and the incorporated certification and test procedures for vapor recovery systems, D-200, CP-201, TP-201.1B, TP-201.1C, TP-201.1D, TP-201.4, and TP-201.6C, as modified, after making them available to the public for comment for a period of at least 15 days. The Board further provided that the Executive Officer shall consider such written comments as may be submitted during this period, shall make such modifications as may be appropriate in light of the comments received, and shall present the regulations to the Board for further consideration if warranted.

Written comments on the modifications must be submitted by postal mail, electronic mail, or facsimile as follows:

Postal mail must be sent to:

Clerk of the Board
Air Resources Board
P.O. Box 2815
Sacramento, California 95812

Electronic mail is to be sent to: mailto:vrmth01@listserv.arb.ca.gov
Facsimile submissions are to be transmitted to: (916) 322-3928.

In order to be considered by the Executive Officer, comments must be directed to the ARB in one of the three forms described above and received by the ARB by 5:00 p.m. on the last day for supplemental comment listed at the beginning of this notice. Only comments relating to the additional modifications to the text of the regulations will be considered by the Executive Officer.

If you are a person with a disability and desire to obtain this document in an alternative format, please contact the Air Resources Board ADA coordinator at (916) 323-4916.

Persons with hearing or speech impairments can contact us by using our Telephone Device for the Deaf (TDD) at (916) 324-9531 or (800) 700-8326 for TDD calls from outside the Sacramento area.

Attachments:
Excerpts from D-200
Excerpts from CP-201
Excerpts from TP-201.1B
Excerpts from TP-201.1C
Title 17, CCR, section 94153

ATTACHMENT 1

California Environmental Protection Agency

Air Resources Board

Vapor Recovery Definitions

PROPOSED D-200

DEFINITIONS FOR VAPOR RECOVERY PROCEDURES

Adopted: April 12, 1996
Amended: March 17, 1999
Amended: February 1, 2001
Amended: _____

The originally proposed text (September 7, 2001) is shown with underline for additions and ~~strikeout for deletions~~. Modifications to the originally proposed text (March 15, 2002) are shown with ***bold italics for additions*** and ~~SMALL CAPS STRIKEOUT FOR DELETIONS~~. Only the pages that contain modifications are included.

~~refers to~~ the minimum volumetric fraction of combustible gas, in air, which will support the propagation of flame; commonly expressed in units of percent (%) or parts per million (ppm).

Standard references for physical properties of combustible gases differ by a few percent in their listed values for lower explosive limit (LEL) and differ also in terms employed. For clarity:

~~(1)~~ "LEL" shall mean the same as "lower limit of flammability," "lower end of the explosive range", and other related terms in common technical discourse.

~~(2)~~ The authoritative reference for determination of LEL values shall be the chapter ~~"~~GASEOUS FUELS~~"~~, by C. C. Ward, pages 7-21 to 7-24 of *Marks' Standard Handbook for Mechanical Engineers*, Eighth Edition, McGraw Hill, New York, 1978.

~~(3)~~ The LEL for propane is 2.1% (21,000 ppm).

~~"~~major modification~~"~~

~~means THE ADDITION, REPLACEMENT, OR REMOVAL OF AN UNDERGROUND STORAGE TANK, UNDERGROUND PIPING, VAPOR PIPING WITHIN A DISPENSER, OR A DISPENSER AT AN EXISTING INSTALLATION. THE REPLACEMENT OF A DISPENSER IS NOT A MAJOR MODIFICATION WHEN THE REPLACEMENT IS OCCASIONED BY END USER DAMAGE TO A DISPENSER.~~

the modification of an existing GDF that makes it subject to the same requirements to which a new installation is subject.

modification of the Phase I system that involves the addition, replacement, or removal of an underground storage tank, or modification that causes the tank top to be unburied, is considered a major modification of the Phase I system.

modification of the Phase II system that involves the addition, replacement or removal of 50 percent or more of the buried vapor piping, or the replacement of dispensers, is considered a major modification of the Phase I system. The replacement of a dispenser is not a major modification when the replacement is occasioned by end user damage to a dispenser.

~~"mini-boot (vapor guard)"~~

~~refers to a device that is permanently installed at the base of a bootless vapor recovery nozzle spout to enhance the effectiveness of vapor collection.~~

~~"~~multi-product dispenser~~"~~

~~refers to~~ a dispenser of multiple products with two or more hoses per dispenser side.

"National Institute of Standards and Technology"

refers to the United States Department of Commerce, National Institute of Standards and Technology (NIST) which, through its Standard Reference Materials (SRM) Program, provides science, industry, and government with a source of well-characterized materials certified for chemical composition or for some chemical or physical property. These materials are designated SRMs and are used to calibrate instruments and to evaluate analytical methods and systems, or to produce scientific data that can be referred readily to a common base.

new installation"

means a gasoline dispensing facility that is not constructed as of the operative date of the latest amendments to Certification Procedure CP-201 or a gasoline dispensing facility constructed as of the operative date of the latest amendments to Certification Procedure CP-201 that has undergone a major modification on or after the operative date of the amendments.

"novel"

is a modifier which indicates a vapor recovery system (or system feature) or facility to which the written procedures (of general applicability) do not apply; for such a novel system or facility, new system-specific or facility-specific performance specifications and test procedures shall be developed and required as conditions of certification.

"nozzle bellows (nozzle boot)"

refers to the flexible device around the spout of some vapor recovery nozzles, utilized to contain the vapor displaced from the vehicle.

"on-board refueling vapor recovery system"

refers to vehicle based system required by Title 13, California Code of Regulations, Section 1978, or Part 86, Code of Federal Regulations.

"operative date"

refers to the date on which a regulated person is first required to act or is prohibited from acting.

"over-fill *prevention* PROTECTION device"

refers to a device designed to stop the delivery of product to a storage tank to prevent the over-filling of the tank and potential spillage.

"phase I"

refers to control of vapors during the transfer of gasoline from the cargo tank to the gasoline dispensing facility.

ATTACHMENT 2

California Environmental Protection Agency

Air Resources Board

Vapor Recovery Certification Procedure

PROPOSED CP - 201

Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities

Adopted: December 9, 1975
Amended: March 30, 1976
Amended: August 9, 1978
Amended: December 4, 1981
Amended: September 1, 1982
Amended: April 12, 1996
Amended: April 28, 2000
Amended: February 1, 2001
Amended: June 1, 2001
Amended July 25, 2001
Amended: _____

The originally proposed text (September 7, 2001) is shown with underline for additions and ~~strikeout for deletions~~. (Page numbers in the table of contents will be corrected in finalized CP-201.) Modifications to the originally proposed text (March 15, 2002) are shown with ***bold italics for additions*** and ~~SMALL CAPS STRIKEOUT FOR DELETIONS~~. Only the pages that contain modifications are included.

CP-201
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3. PHASE I PERFORMANCE STANDARDS AND SPECIFICATIONS

Table 3-1 summarizes the Phase I Performance Standards and Specifications applicable to **all Phase I and Phase II** vapor recovery systems.

Table 3-1
Phase I Performance Standards and Specifications
APPLICABLE TO ALL VAPOR RECOVERY SYSTEMS

Performance Type	Requirement	Sec.	Std. Spec.	Test Procedure
Phase I Efficiency	≥ 98.0%	3.1	Std.	TP-201.1 TP-201.1A
Phase I Emission Factor	HC ≤ 0.15 pounds/1,000 gallons	3.1	Std.	TP-201.1A
Static Pressure Performance	In accordance with section 3.2	3.2	Std.	TP-201.3
Pressure Integrity of Drop-Tube with Overfill ***Prevention*** ~~PROTECTION~~	≤ 0.17 CFH at 2.0 inches H_2O	3.3	Spec.	TP-201.~~2O~~1D
Phase I Product and Vapor Adaptor/Delivery Elbow Connections	Rotatable 360°, ~~O~~or equivalent	3.4	Spec.	TP-201.1B ~~Testing~~ and Eng. Eval.
~~Phase I Vapor Adaptor/ Delivery Elbow Connection~~	~~Rotatable 360°, or equivalent~~	~~3.4~~	~~Spec.~~	~~Testing and Eng. Eval.~~
Phase I Product Adaptor Cam and Groove	As shown in Figure 3A	3.4	Spec.	Micrometer
Phase I Vapor Recovery Adaptor Cam and Groove	CID A-A-59326 (As shown in Figure 3B)	3.4	Spec.	Micrometer
Phase I Vapor Adaptor	Poppetted	3.4	Spec.	Testing and Eng. Eval.
Phase I Vapor Adaptor	No Indication of Leaks Using Liquid Leak Detection Solution (LDS) or Bagging	3.4	Spec.	LDS or Bagging
Phase I Vapor Adaptor Dynamic Pressure Drop	Pressure Drop at 300, 400, & 500 gpm Specification to be Established During Certification Process	3.4	Spec.	TP-201.2B
Phase I Product and Vapor Adaptors	≤ 108 pound-inch (9 pound-foot) Static Torque	3.4	Spec.	TP-201.1B

Table 3-1
Phase I Performance Standards and Specifications
APPLICABLE TO ALL VAPOR RECOVERY SYSTEMS

Performance Type	Requirement	Sec.	Std. Spec.	Test Procedure
UST Vent Pipe Pressure/Vacuum Relief Valves	Pressure Settings 3.0 ± 0.5 inches H_2O Positive Pressure 8.0 ± 2.0 inches H_2O Negative Pressure Leakrate at +2.0 inches H_2O ≤ 0.17 CFH Leakrate at -4.0 inches H_2O ≤ 0.21 CFH Total Additive Leakrate from All P/V Valves ≤ 0.17 CFH at 2.0 inches H_2O	3.5	Spec.	TP-201.2B
Spill Container ~~CONTAINMENT BOX~~ Drain Valves	Leakrate ≤ 0.17 CFH at +2.0 inches H_2O	3.6	Spec.	TP-201.2B TP-201.1C TP-201.1D
Spill Container ~~CONTAINMENT BOXES~~	~~Leakrate at +2.0 inches H_2O ≤ 0.17 CFH~~ No Standing Fuel in Box	3.6	Spec.	~~TP-201.2B~~ Visual
Vapor Connectors and Fittings	No Indication of Leaks Using Liquid Leak Detection Solution (LDS) or Bagging	3.7	Spec.	LDS or Bagging
Compatibility with Fuel Blends	Materials shall be compatible with approved fuel blends	3.8	Spec.	Testing and Eng. Eval.

3.1 Phase I Efficiency/Emission Factor

2.1.1 The minimum volumetric efficiency of Phase I systems shall be 98.0%. This shall be determined in accordance with TP-201.1 (Volumetric Efficiency of Phase I Systems at Dispensing Facilities).

2.1.2 The hydrocarbon emission factor for systems with processors shall not exceed 0.15 pounds per 1,000 gallons dispensed. This shall be determined in accordance with TP-201.1A (Emission Factor for Phase I Systems at Dispensing Facilities).

3.2 Static Pressure Performance

The static pressure performance of Phase I vapor recovery systems not associated with Phase II systems shall be determined in accordance with TP-201.3 (Determination of 2 Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities).

3.2.1 All Phase I systems shall be capable of meeting the performance standard in accordance with Equation 3-1.

3.2.2 The minimum allowable five-minute final pressure, with an initial pressure of two (2.0) inches H_2O, shall be calculated as follows:

[Equation 3-1]

[delete equation below]

$$P_f = 2e^{\frac{-760.490}{V}}$$

[add the following corrected equation]

$$P_f = 2e^{\frac{-500.887}{V}}$$

Where:

P_f = The minimum allowable five-minute final pressure, inches H_2O

V = The total ullage affected by the test, gallons

e = A dimensionless constant approximately equal to 2.718

= The initial starting pressure, inches H_2O

3.3 Phase I Drop-Tubes with Over-Fill *Prevention* ~~PROTECTION~~ Devices

Phase I drop-tube~~s with~~ over-fill ***prevention*** ~~PROTECTION~~ devices ~~installed~~ shall have leak rate not to exceed 0.17 cubic feet per hour (0.17 CFH) at a pressure of two inches water column (2.0" H_2O). The leak rate shall be determined in accordance with ~~TP-201.2O~~ TP-201.1D (Pressure Integrity of Drop Tube Overfill Protection Devices). Drop-tubes that do not have an over-fill ***prevention*** ~~PROTECTION~~ device shall not leak.

3.4 Phase I ~~Product and~~ Vapor Recovery and Product Adaptors

3.4.1 The vapor recovery and product adaptors shall not leak. The vapor recovery and product adaptors, and the method of connection with the delivery elbow, shall be designed so as to prevent the over-tightening or loosening of fittings during normal delivery operations. This may be accomplished by installing a swivel connection on either the storage tank (rotatable adaptor) or delivery elbow side of the equipment, or by anchoring the product and vapor adaptors in such a way that they are not rotated during deliveries, provided the anchoring mechanism does not contribute undue stress to other tank connections. If a delivery elbow with a swivel connection is the preferred method, only cargo tank trucks with those elbows shall deliver to the facility.

3.4.2 Phase I product adaptors shall be manufactured in accordance with the cam and groove specification as shown in Figure 3A. Phase I vapor recovery adaptors shall be manufactured in accordance with the cam and groove specification as specified in the Commercial Item Description CID A-A-59326 (shown in Figure 3B). These specifications shall be applicable only to new adaptors and shall not be applied to in-use adaptors.

~~3.4.2~~ 3.4.3 Phase I vapor recovery adaptors shall have a poppet. The poppet shall not leak when closed. The absence of vapor leaks may be verified by the use

of commercial liquid leak detection solution, or by bagging, when the vapor containment space of the underground storage tank is subjected to a non-zero gauge pressure. (Note: leak detection solution will detect leaks only when positive gauge pressure exists.)

~~3.4.3~~ 3.4.4 The Phase I vapor adaptor shall have performance specifications for the maximum pressure drop at 300, 400 and 500 gallons per minute (gpm) (± 50. gpm). The specifications shall be documented by the applicant and verified during the certification process.

3.4.5 The static torque of product and vapor recovery adaptors shall not exceed 108 pound-inch (9 pound-foot) when measured in accordance with TP-201.1B.

3.5 Pressure/Vacuum Relief Vent Valves

The Executive Officer shall certify only those vapor recovery systems equipped with a pressure/vacuum (P/V) relief valve(s) on the underground storage tank vent pipe(s). Compliance with the P/V valve requirements set forth below shall be determined by TP-201.2B, Appendix 1.

3.5.1 The pressure settings for P/V valves shall be:
Positive pressure setting of 3.0 ± 0.5 inches H_2O.
Negative pressure setting of 8.0 ± 2.0 inches H_2O.

3.5.2 The leak rates for P/V valves, including connections, shall be less than or equal to:

0.17 CFH at +2.0 inches H_2O.
0.21 CFH at -4.0 inches H_2O.

3.5.3 The total additive leakrate of all P/V valves installed on any vapor recovery system, including connections, shall not exceed 0.17 CFH at 2.0 inches H_2O. This may be accomplished by manifolding the tank vent pipes into a single P/V valve or, alternatively, by choosing P/V valves certified to a more restrictive performance specification.

3.6 *Spill Containers* ~~CONTAINMENT BOXES~~

3.6.1 Phase I ***spill containers*** ~~CONTAINMENT BOXES with~~ drain valves shall not exceed a leak rate of 0.17 CFH at 2.0 inches H_2O. ***Spill containers*** ~~CONTAINMENT BOXES~~ with cover-actuated drain valves shall be tested both with the lid installed and with the lid removed. The leak rate shall be determined in accordance with TP-201.2B (Pressure Integrity of Vapor Recovery Equipment). Phase I configurations installed so that liquid drained through the drain valve drains directly into the drop tube rather than the UST ullage shall be tested in accordance with TP-201.1C or TP-201.1D, whichever is applicable.

3.6.2 Drain valves shall not be allowed in ***spill containers*** ~~CONTAINMENT BOXES~~ used exclusively for Phase I vapor connections unless~~. Drain valves in~~

~~containment boxes for Phase I product connections shall be allowed if~~ required by other applicable regulations.

3.6.3 ***Spill containers*** ~~CONTAINMENT BOXES~~ shall be maintained to be free of standing gasoline. Any gasoline spilled into, or found in, a ***spill container*** ~~CONTAINMENT BOX~~, shall be removed by the operator at the first opportunity that does not cause a safety hazard. The removal of gasoline shall be performed in accordance with the applicable requirements of the State Water Resources Control Board, the Department of Toxic Substance Control, and all other applicable regulations.

3.6.4 For any ***spill container*** ~~CONTAINMENT BOX~~ that is not exclusively dedicated to the Phase I vapor connector, and that does not have a CARB-certified drain valve, a gasoline-compatible device for evacuating fuel from a containment box, such as a small hand pump, shall be maintained on site and available for use in every gasoline dispensing facility.

4.8 Liquid Retention

4.8.1 Liquid retention in the nozzle and vapor path on the atmospheric side of the vapor check valve shall not exceed 100 ml per 1,000 gallons. This shall be determined in accordance with TP-201.2E (Gasoline Liquid Retention in Nozzles and Hoses).

4.8.2 Nozzle "spitting" shall not exceed 1.0 ml per nozzle per test and shall be determined in accordance with TP-201.2E (Gasoline Liquid Retention in Nozzles and Hoses).

4.8.3 The number of self-service refueling operations observed during certification testing of any system for liquid retention shall be not less than:
10 refueling operations ***per nozzle*** (not including topoffs); and
4 fill-ups (terminated by automatic shut-off, not including topoffs).

4.9 Liquid Removal Systems

Liquid removal systems are designed to evacuate liquid from the vapor passage of the hose. Such systems are required in configurations that would otherwise be subject to liquid blockage that creates increased emissions.

4.9.1 The liquid removal rate shall be determined in accordance with TP-201.6 (Determination of Liquid Removal of Phase II Vapor Recovery Systems of Dispensing Facilities). The minimum removal rate, averaged over a minimum of 4 gallons, shall equal or exceed 5 ml per gallon. The minimum dispensing rate for this requirement shall be specified during the certification process.

4.10 Nozzle/Dispenser Compatibility

The nozzle and dispenser shall be compatible as follows:

4.10.1 The nozzle and dispenser shall be designed such that the vapor check valve is in the closed position when the nozzle is properly hung on the dispenser.

4.10.2 The nozzle and dispenser shall be designed such that the nozzle cannot be hung on the dispenser with the nozzle valves in the open position.

4.11 Unihose MPD Configuration

There shall be only one hose and nozzle for dispensing gasoline on each side of a multi-product dispenser (MPD). This shall not apply to facilities installed prior to the effective date of this procedure unless the facility replaces more than 50 percent of the dispensers or makes a modification other than the installation of required sensors, that modifies over 50 percent of the vapor piping in the dispensers. Exception: dispensers which must be replaced due to damage resulting from an accident or vandalism may be replaced with the previously installed type of dispenser.

16. CERTIFICATION OF NON-SYSTEM-SPECIFIC COMPONENTS

Certification of vapor recovery systems shall include certification of all components present on the system during certification testing. In order to expedite the certification process and to provide system owners and operators flexibility in the choice of components, some components may be certified as alternatives to the components certified on the system. Some components may be certified on multiple systems, provided they meet the requirements listed in this section.

16.1 Properties of Non-System-Specific Components

Only those components that can be defined by performance specifications, and that do not directly affect the performance of the system, shall be considered non-system-specific components.

16.2 Testing Requirements

Components that are non-system-specific shall be subjected to sufficient operational testing to verify the reliability of the component as an alternative component on a certified system. Testing on one system may be used in the evaluation of the component for use on other systems for which the performance is similar with regard to the component. For systems with dissimilar performance characteristics, additional testing may be required.

16.3 Identification of Components

The tables below identify components that are system-specific, and require the full system testing, and those components that are considered to be non-system-specific. The testing requirements listed for the non-system-specific components are the minimum requirements; additional tests may be required as necessary. Any component not included in these tables shall be presumed to be system-specific unless the Executive Officer determines, in writing, that the component may be considered non-system-specific.

Table 16-1
System-specific Components

Component
Phase I Spill Container Drain Valve
Phase I Spill Container Drain Valve Configuration
Phase I Product and Vapor Adaptors
Phase I Drop Tube Overfill Prevention Device
Vacuum Source
Processor
Nozzle
Control Board

Table 16-2
Non-System-specific Components

Non-System-Specific Components	Minimum Testing Requirements
Dispenser Vapor Piping (balance)	Eng Eval., Pressure Drop, Integrity
Coaxial Hose	Eng. Eval., Operational Test, Pressure Drop, Integrity
Liquid Removal System	Eng. Eval., Operational Test, Pressure Drop, TP-201.6
Breakaway Coupling	Eng. Eval., Operational Test, Pressure Drop, Integrity
Flow Limiter	Eng. Eval., Operational Test, Function Test
Coaxial Swivel	Eng. Eval., Operational Test, Pressure Drop
Conversion Fitting	Eng. Eval., Operational Test, Pressure Drop
Pressure/Vacuum Vent Valve	Eng. Eval., Operational Test, Pressure Drop, TP-201.2B
Impact Valve (for vapor line)	Eng. Eval., Operational Test, Pressure Drop, Integrity
Phase I Delivery Elbow***s***	Eng. Eval., Operational Test, Pressure Drop, TP-201.1
~~PHASE I VAPOR ADAPTOR~~	~~ENG. EVAL., OPERATIONAL TEST, PRESSURE DROP, TP-201.1~~
~~PHASE I FILL ADAPTOR~~	~~ENG. EVAL., OPERATIONAL TEST~~
Phase I Drop Tube	Eng. Eval., Operational Test
~~PHASE I OVERFILL PROTECTION DEVICE~~	~~ENG. EVAL., OPERATIONAL TEST, TP-201.1~~
Phase I Fill or Vapor Cap	Eng. Eval., Operational Test, Integrity
Phase I Spill Containers	Eng. Eval., Operational Test, Integrity
Phase I Tank Bottom Protector	Eng. Eval., Operational Test
Phase I Ball Float Valve	Eng. Eval.,~~UATION and~~ ***Operational*** Test~~ING~~
Phase I Extractor Fitting	Eng. Eval.,~~UATION and~~ ***Operational*** Test~~ING~~

ATTACHMENT 3

California Environmental Protection Agency

Air Resources Board

Vapor Recovery ~~Compliance~~ Test Procedure

PROPOSED TP-201.1C

Pressure Integrity of Drop Tube/Drain Valve Assembly

Adopted:_____

Note: All text was proposed for adoption on September 7, 2001. As authorized by title 2, California Code of Regulations, section 8, the use of underlines to indicate addition or adoption was omitted. Modifications to the text are proposed (March 15, 2002). The modifications are shown with underline for additions and ~~strikeout for deletions~~. Only the page that contains the modifications is included.

7. TEST PROCEDURE

7.1 Connect the Pressure Introduction Assembly to the Phase I product drop tube as shown in Figure 1. Connect the nitrogen supply line to the inlet of the flowmeter.

7.2 Connect the Vapor Poppet Pressure Relief Assembly to the Phase I vapor poppet to bring the UST headspace to atmospheric pressure.

7.3 With no vehicle refueling occurring, open the nitrogen supply and adjust the nitrogen flowrate to at least three times the maximum allowable leakrate specified in CP-201, and start the stopwatch.

7.4 Wait until the pressure measuring device records a pressure between 2.00 and 2.20 inches H_2O.

7.4.1 If the pressure does not reach at least 2.00 inches H_2O within ~~90~~ 180 seconds, the Drop Tube/Drain Valve Assembly does not comply with the maximum allowable leakrate.

7.4.2 If the pressure reaches at least 2.00 inches H_2O, reduce the introduction of nitrogen to the allowable leakrate specified in CP-201. Wait until the pressure reaches steady state conditions for at least ten (10) seconds and record both the nitrogen flowrate and the steady state pressure. If the steady state pressure is less than 2.00 inches H_2O, the Drop Tube/Drain Valve Assembly does not comply with the maximum allowable leakrate.

If the Drop Tube/Drain Valve Assembly does not reach the minimum specified pressure, use a soap solution on the rotatable adaptor to check for leaks at the rotation mechanism or the adaptor

ATTACHMENT 4

California Environmental Protection Agency

Air Resources Board

Vapor Recovery ~~Compliance~~ Test Procedure

PROPOSED: TP-201.1B

Static Torque of Rotatable Phase I Adaptors

Adopted:_____

Note: All text was proposed for adoption on September 7, 2001. As authorized by title 2, California Code of Regulations, section 8, the use of underlines to indicate addition or adoption was omitted. Modifications to the text are proposed (March 15, 2002). The modifications are shown with underline for additions and ~~strikeout for deletions~~. Only the pages that contain modifications are included.

4. SENSITIVITY, RANGE, AND PRECISION

4.1 The measurable static torque is dependent upon the range of the Torque Wrench used for the test. The recommended Torque Wrench range specified in Section 5.1 provides sufficient precision at the maximum allowable static torque.

5. EQUIPMENT

5.1 Torque Wrench. Use a compatible Torque Wrench to measure the static torque of the rotatable vapor recovery adaptor.

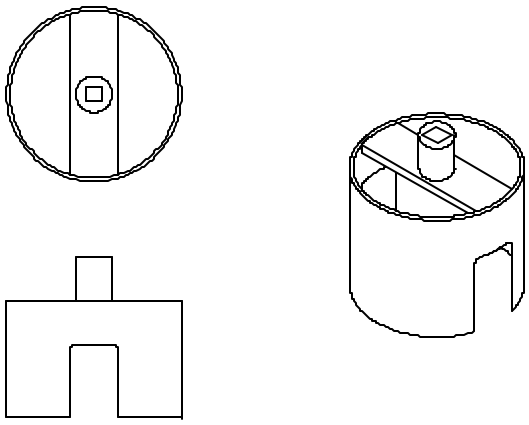
5.1.1 The minimum full-scale range of the Torque Wrench shall be 144 ~~inch-pounds~~pound-inches (12 ~~foot-pounds~~pound-feet) with minimum accuracy of ~~1.0~~3.00 percent.

5.1.2 The minimum readability of the Torque Wrench shall be 5.00 pound-inch increments to ensure accurate readings.

5.2 Static Torque Test Assembly. Use a compatible dust cap and rotatable adaptor Torque Test Tool, Phil-Tite® Part Number 6004 or equivalent. A depiction of the Phil-Tite® Torque Test Tool is shown in Figure 1. An example of a complete Static Torque Test Assembly is shown in Figure 2.

5.3 Socket wrench and socket extension. Use a $^{3}/_{8}$ inch or ½ inch socket wrench, adaptors and socket extension (if needed) to verfiy 360-degree rotation or to conduct static torque testing. The socket extension shall not exceed 12 inches in length.

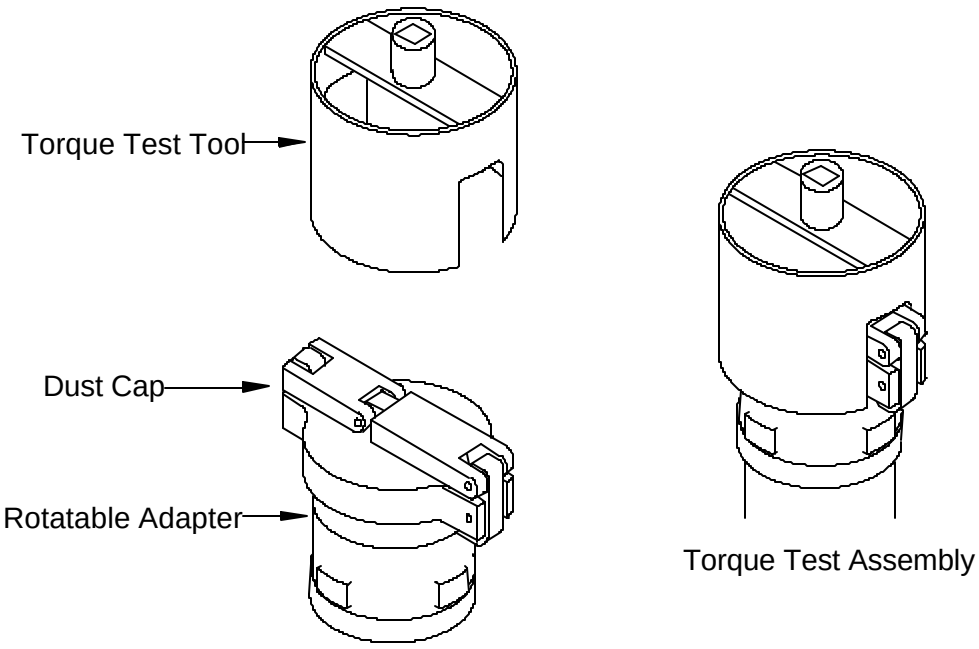
Figure 1
Phil-Tite® Torque Test Tool



~~5.3~~5.4Traffic Cones. Use traffic cones to encircle the Phase I area while the test is being conducted.

~~5.4Socket Extension. If required to conduct testing, use a compatible socket extension that does not exceed 12 inches in length.~~

Figure 2
Static Torque Test Assembly



6. PRE-TEST PROCEDURES

6.1 Place the traffic cones around the perimeter of the Phase I spill containment buckets, allowing sufficient space to safely conduct the test.

6.2 Remove the lids of the Phase I spill containment buckets. Visually determine that the adaptors are of the rotatable design.

6.3 Inspect the dust caps to ensure that the caps and that the gaskets are intact and do not show signs of excessive wear or damage.

6.4 Inspect the rotatable adaptors. If the adaptors are wet or covered with a lubricant, wipe the adaptors clean to ensure maximum friction between the dust cap and the adaptor seal surface.

7. TEST PROCEDURE

7.1 Install the dust cap on the Phase I rotatable adaptor.

7.2 Install the Torque Test Tool on the dust cap as shown in Figure 2.

7.3 Verification of rotation, conducted prior to the Static Torque Test. Place a socket wrench with socket extension (if required) into the Torque Test Tool, or equivalent. Rotate the adaptor a minimum of 360 degrees. Note: do not continue with static torque measurements if the adaptor does not rotate 360 degrees.

7.~~2~~4 Install the Torque Wrench into the Torque Test Tool. If the spill containment bucket is too deep to allow connection of the Torque Wrench, use a compatible socket extension to reach into the bucket to the Torque Test Tool. The socket extension shall not exceed 12 inches in length.

7.~~3~~5 Place one hand on top of the Torque Wrench, directly above the center of the Torque Test Tool to keep the wrench level when applying pressure. Gently apply an even, steady pressure to the Torque Wrench while observing the adaptor for rotation. Once the adaptor begins to rotate, record the first measured static torque on the data sheet and proceed to 7.6 and 7.7.

7.4~~6~~ ~~Repeat Section 7.3 two additional times for each adaptor.~~ After the first static torque measurement is taken, slowly rotate the adaptor one third of full rotation (120 degrees) from the point of the first measurement location. Using the same technique as specified in 7.3, record the second static torque measurement.

7.7 Following the first and second static torque measurements, rotate the adaptor a second, one third of full rotation (120 degrees) and take the third static torque measurement according to the technique listed in 7.3. Rotating the adaptor in one-third increments ensures that the average static torque is representative of the entire adaptor rotation.

8. POST-TEST PROCEDURES

8.1 Remove the Torque Test Assembly and replace the appropriate lids on each of the spill containment buckets.

8.2 Remove the traffic cones from the Phase I area.

9. CALCULATING RESULTS

9.1 Calculate the arithmetic average of the three tests for each adapter tested and record on a data sheet.

Form 1
Static Torque of Rotatable Phase I Adaptors

Test Company:	**Conducted By**:
Test Date:	**Facility Name:**
Facility Address:	**City:**

Measurement Units: (circle one): pound-inch pound-foot

Vapor Adaptor 1	Vapor Adaptor 2	Vapor Adaptor 3	Vapor Adaptor 4
Brand:	**Brand:**	**Brand:**	**Brand:**
Model:	**Model:**	**Model:**	**Model:**
Grade:	**Grade:**	**Grade:**	**Grade:**
Torque 1:	Torque 1:	Torque 1:	Torque 1:
Torque 2:	Torque 2:	Torque 2:	Torque 2:
Torque 3:	Torque 3:	Torque 3:	Torque 3:
Average:	**Average:**	**Average:**	**Average:**
360 Rotation Yes No	**360 Rotation Yes No**	**360 Rotation Yes No**	**360 Rotation Yes No**

Product Adaptor 1	Product Adaptor 2	Product Adaptor 3	Product Adaptor 4
Brand:	**Brand:**	**Brand:**	**Brand:**
Model:	**Model:**	**Model:**	**Model:**
Grade:	**Grade:**	**Grade:**	**Grade:**
Torque 1:	Torque 1:	Torque 1:	Torque 1:
Torque 2:	Torque 2:	Torque 2:	Torque 2:
Torque 3:	Torque 3:	Torque 3:	Torque 3:
Average:	**Average:**	**Average:**	**Average:**
360 Rotation Yes No	**360 Rotation Yes No**	**360 Rotation Yes No**	**360 Rotation Yes No**

Comments: _____

ATTACHMENT 5

PROPOSED MODIFICATION OF AMENDMENTS
TO CALIFORNIA CODE OF REGULATIONS

Note: In the originally noticed text (September 7, 2001), ~~strikeout~~ indicates deleted text; underline indicates inserted text. Additional text proposed for deletion is shown in ~~double strikeout~~.

§ 94153. Test Method for Determining the Dynamic Pressure Performance of Phase II Vapor Recovery Systems of Dispensing Facilities.

The test method for determining the dynamic pressure performance of Phase II vapor recovery systems of dispensing facilities ~~with above-ground storage tanks~~ is set forth in the Air Resources Board's TP-201.4 "~~Determination of~~ Dynamic Back Pressure ~~Performance of Vapor Recovery Systems of Dispensing Facilities~~" which is incorporated herein by reference. (Adopted: April 12, 1996, as last amended ~~April 28, 2000~~ [insert amendment date])

NOTE: Authority cited: Sections 39600, 39601, 39607 and 41954, Health and Safety Code. Reference: Sections 39515, 39516, 39605, 40001 and 41954, Health and Safety Code.